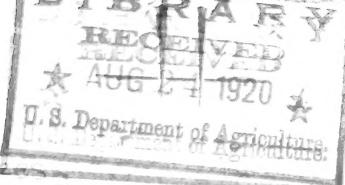


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1909?



Planting of forest trees

Read and Reflect

THIS IS WORTHY OF A
CAREFUL READING

COMPLIMENTS OF THE

Sherman Nursery
Company

Charles City, Iowa

*General Growers of Hardy
Shade and Forest Trees*

What of the Future?

The clippings, quotations and extracts herein are gleaned from many sources. We have sought to cover a wide range of territory with its varying climatic and soil conditions. The writers quoted are as a rule not interested in the sale of nursery stock, but are men of long experience in the actual growing of forest trees. The average man is not content to "cast his bread upon the waters" and have it come back after **many** days, but wants it back on the next wave, and this is one of the chief reasons why so few land owners **do not** plant largely of trees. The grains, grasses and animals return a revenue yearly, while trees apparently require more time. And yet, a growing tree is a source of comfort and a revenue producer each and every year of its existence.

For the first few years it helps to bring moisture and protection while later on its value is increased in its uses as posts, poles and lumber.

No one item enhances the value of a farm more than a fine large grove and many a sale of a really good farm has been lost because of the lack of a grove or wind-break. We remember very well the western part of Iowa as barren of trees and when the settlers planted Cottonwoods, Box Elders and Soft Maples, as shelter belts and wind-breaks, no thought entered their minds of ever cutting these trees into lumber and yet if you will read Mr. Warren's letter herein you will note its contents with surprise. We know of a farm in Cherokee County, Iowa, of three hundred and twenty acres which was entirely fenced with posts cut from its own grove seven years after planting, and this grove has furnished posts continually for over twenty-five years.

Large firms and corporations and some of our states are awakening to the decrease of our forests and to the demands of the future. Tracts of timber, hundreds of miles from railroads or other transportation are eagerly bought at large prices, on which no logging or lumbering will be done for years, while railroads are setting out millions of small trees for their future tie and timber supply. No farmer or land owner could make a more profitable investment than to plant a certain acreage of his farm to forest trees and care for them. Ten acres on a farm of one hundred and sixty acres, and in like proportion on larger farms, would be a veritable gold-mine in the years to come. If any of our customers, friends or readers desire further information as to the varieties of trees to plant in their locality or of the method of planting and caring for the trees, we will gladly give them our views upon request.

A NEW FARM CROP.

Taken from the Woman's National Daily—

Nothing better illustrates the educational progress that is possible under modern conditions in this country than the strides that have been made in forestry during the past ten years. Forestry was an unknown science a decade ago. There were no forestry schools in the country and very few foresters—not more than a dozen according to the statement recently issued from the government forestry service office. There are today a number of professional forest schools in the United States, and there are more than four hundred trained foresters. Ten years ago there was not a state in the union that employed a forester. Now there are eleven such states. A de-

cade ago there was only one state that had a state protected forest; now there are ten such. In 1898 the membership in forest organizations was 3,600; it is 15,800 today. At the time of McKinley's assassination the farmer who considered a timber crop as essential as other crops was an exception. Now, so rapid has been forestry development, that the farm that is without a woodlot is considered incomplete.

Cruel necessity has awakened men. But she had to dig the spurs deep to effect this end. The wood supply was nearly exhausted before the nation realized it. To the government is due the credit for sounding the warning and for taking the initial steps toward correcting abuses and rectifying past errors. Many of our departments of government have done valuable service of a most practical nature within the last eight or ten years, but there has been no greater progress made in any line of national endeavor than that effected under the direction of the federal forestry service. The point had been reached where action was imperative. Self-preservation demanded it, and when that is an issue there is always something beneficial accomplished. Despite the great results that have been effected, grave danger of a wood famine still exists. The forestry service informs us that we are now using as much wood every year as is grown in three years, and that there is only twenty years supply of virgin growth in sight. We have barely made a beginning, and we have only twenty years in which to correct the mistakes of more than one hundred years. In those twenty years means must be found for making the supply of wood meet the demand. It is not a question of whether or not this can be done. The simple fact is that it must be done.

And thus we find the government endeavoring to make the farmer understand that a forest may be a better crop than oats or wheat or corn. Particular effort is being made to teach this truth to farmers in localities where the rainfall is heavy. Use the land that does not yield the best results in other kinds of farming for the cultivation of wood, is the expert advice. And even where good land is thus used it is declared that the wood crop will more than pay for the loss of part of the farm devoted to its cultivation. The government experts say that good groves are worth \$1,000 an acre and that the returns from forests that are carefully cultivated will yield a net profit of from \$4 to \$6 and \$10 an acre. It is also shown that these groves of trees have a value above that to be derived from the sale of the wood. They protect the farm, the orchards and the fields. They act as a windbreak. They reduce the cost of the winter feed of stock. They minimize the danger from frost and they supply the farmer with the wood that he needs for repairs, for fences and for burning. The forester's plea is not for the giving up of entire farms to the cultivation of trees, for probably no farmer could afford to wait until his wood was ready for harvesting, but they do argue that timber is a profitable crop and that when it is cultivated in connection with other crops it will pay well. As evidence of the growth of the educational seed the forestry service has planted, it is cited that one nurseryman recently shipped 400,000 jack pine seedlings to Nebraska, where they passed into the hands of far-seeing farmers who intended to take advantage of the certain profit "business chance" that has been brought to their notice by the government."

From a circular issued by the U. S. Forestry Department on "What Forestry has done."

"Many people in this country think that forestry had never been tried until the Government began to practice it upon the National Forests. Yet forestry is practiced by every civilized country in the world, except China and Turkey. It gets results which can be got in no other way, and which are necessary to the general welfare. Forestry is not a new thing. It was discussed two thousand years ago,

and it has been studied and applied with increasing thoroughness ever since.

The principles of forestry are everywhere the same. They rest on natural laws, which are at work everywhere and all the time. It is simply a question of how best to apply these laws to fit local needs and conditions. No matter how widely countries may differ in size, climate, population, industry, or government, provided only they have forests, all of them must come to forestry some time as a matter of necessity.

The more advanced and progressive countries arrive first and go farthest in forestry, as they do in other things. Indeed, we might almost take forestry as a yardstick with which to measure the height of a civilization. On the one hand, the nations which follow forestry most widely and systematically would be found to be the most enlightened nations. On the other hand, when we applied our yardstick to such countries as are without forestry, we could say with a good deal of assurance, by this test alone, "Here is a backward nation."

What is true of nations as above stated can be truly applied to individuals and the land owner who fails to make some provision in this direction is certainly not taking the wise course.

Here is a nice investment by D. C. Smith, Parker, S. Dak. His 88,000 feet of lumber is worth \$2200.00 besides he has 300 cords of wood worth at least \$900.00 more, making an annual yearly revenue on each acre of over \$17.00. And all these 30 years he has had the use of this grove as a wind break and protection.

"John Stanley, of Parker, is operating a sawmill south-west of here, cutting up some of the cottonwood timber. He has recently cut 88,000 feet of cottonwood lumber on the farm of D. C. Smith from a grove of not more than six acres in extent, and which was planted by Mr. Smith not over 30 years ago. Besides the 88,000 feet of lumber, Mr. Smith has 300 or more cords of wood as a by-product. Those who have always considered South Dakota a treeless prairie will perhaps be somewhat incredulous as to the truth of this statement, but as matter of fact there are a number more farmers in the vicinity who will realize nearly as much from their groves as has Mr. Smith."

This letter explains itself and refers to Western Iowa. The writer has ridden over this location when groves and trees were too small to notice and no thought was ever entertained of cutting the windbreaks into lumber in the future.

"Mr. Jas. Henderson—City.

Dear Sir:—As you requested me to tell you what my experience has been with cottonwood lumber—I purchased a Reeves lumber saw mill No. O, Dec. 15th, 1903. I bought a ten-horse traction engine, but it could not develop power enough to saw more than a ten-inch log, so I bought a sixteen-horse power steam traction engine which does the work quite well, but a larger engine would be better.

We saw about five thousand feet per day of mixed lumber from Cottonwood trees that are from ten to twenty-four inches across the stump. Three years ago the people thought the lumber was of little use where the sun or moisture would strike it, but now those who have used it have given up that idea. Now we are sawing lumber for outside use, such as for fences, wagon boxes, stock boards for barns, scale platforms, sills of all kinds, eaves for houses.

Three years ago it was hard to sell the lumber for \$16.00 per thousand, now it is quick sale at \$20.00 to \$28.00 per thousand.

I will give you a partial list of the parties I have sawed for and the main use they have put it to.

Name.	Postoffice	Address	No. Feet Sawed.	Used For.
R. Gates	Cherokee	Iowa	12000	Barn
Henry Goodrich	Cherokee	Iowa	16394	Barn
L. Rerfenberger	Cherokee	Iowa	7600	Barn
G. H. Limebach	Cherokee	Iowa	3840	Sold
Frank Eischen	Cherokee	Iowa	600	Trial Use
H. P. Shedd	Cherokee	Iowa	6242	Sheeting and Fence
A. P. Anderson	Marcus	Iowa	23000	Granary
L. Gund	Marcus	Iowa	54000	Barns
A. E. Johnson	Marcus	Iowa	4400	Hog House
John Woodall	Marcus	Iowa	11000	Barn and Corncrib
Jas. Williams	Marcus	Iowa	14800	House
R. Peavy	Marcus	Iowa	17672	Cattle Shed
John Knox	Marcus	Iowa	65000	Barn and Cattle Shed
Dave Prunty	Cleghorn	Iowa	16700	Corn Crib
L. Duncaman	Cleghorn	Iowa	16611	Farm Use

These are only a few of the men I have sawed for. If you want a more complete list, you can have it any time. We have sawed steadily for the last year. It saws much nicer in the summer than in winter when it is frozen, there seems to be as much sap in the log in winter as there is in summer. I believe summer is the proper time to cut logs, because summer cut lumber has a finer grain than winter cut lumber. I use a fifty-two inch inserted tooth saw, with thirty-six teeth. If I have omitted anything, please let me know and I will tell you what my experience has been.

Yours respectfully,

A. G. Warren."

P. S. We have sawed about 600,000 feet in the last year (1906).

WHAT TIMBER WILL PRODUCE IN IOWA.

Uncle Sam Investigates the Subject.

"Clipped."

The production of forty-six cords of fuel per acre in twenty-four years in a planted grove of Silver Maple, of 1,296 Catalpa posts in 21 years and of 352 larch telegraph poles in twenty-nine years have yielded Iowa farmers average annual returns of \$6.65, \$9.26 and \$12.14 per acre respectively. Even these are not the highest figures reported. Here, however, a plantation must necessarily pay well or be subplanted. Iowa has a smaller proportion of non-agricultural land than any other state, and with the increase in demand for fields and grazing lands, woodland must contend for possession of the land with annual crops grown by excellent methods in an ideal agricultural region. The remaining natural timber and planted wood lots, however, so far from receiving similarly the best methods of treatment, have often been sadly neglected and misused.

The rapid removal of native woodland during the past five years has greatly reduced the local supply of posts, fuel and small timbers. In consequence prices have risen from one-third to one-half, and, in the case of posts at least, will continue to increase. On bottom lands subject to overflow, and consequently not adapted to tillage, cottonwood and silver maple can be grown for lumber with excellent returns.

Remarks by G. A. Tracy, Watertown, S. D., on Forest Trees.

"What would one acre of forest trees, planted next spring be worth in twenty years? The man that lives in South Dakota twenty years from now will see fire-wood a scarce article. We will take one acre and plant it with Cottonwood and Carolina Poplar, eight feet apart each way. That would be four trees to the square rod, or 640 trees on an acre. Cultivate thoroughly for two years, then mulch with straw. The first year corn or potatoes could be raised between the rows. At the end of twenty years one could cut one cord of wood from each square rod of ground. That would be a quarter of a cord to the tree. That is not a high estimate. I have cottonwood trees twenty-four years old that, I believe, would make a cord of wood to each tree, and plenty of them would make half a cord. If you could cut one cord from a square rod, that one would make one hundred and sixty cords to the acre, which now would be worth five dollars a cord in the tree, and five times one hundred and sixty would be \$800.00. Now, divide that by twenty years would be \$40.00 a year per acre. If you think that too high an estimate, cut it down half, then it would be \$20.00 for each year.

We can't expect these results if we plant trees and take no care of them; let the grass and weeds grow and take the moisture from the soil, they would make a slow growth and a good many would die in the first two years; but if cultivated the first two years, then mulched, they would make a rapid growth and take care of themselves after that.

But for a permanent grove and windbreak, it would be better to plant Ash, Elm, Box Elder and Soft Maple, and plant not more than four feet apart; then they would soon shade the ground and keep the grass and weeds down. By being close they grow up tall and make timber. But cottonwood does not do well planted close. Eight feet apart is close enough. Cottonwood will make a good tree if planted out alone, while some of the slow growing trees will spread out and grow more like an apple tree. Cottonwood cut up green and let season is worth considerable more a cord than the old dead pine we are getting here now at six dollars a cord.

There is almost no risk at all to run in planting trees, if you get live trees grown anywhere in South Dakota or northern Iowa. Five, ten or more acres of timber planted in a workman like manner and cultivated would be worth several times more than money out at interest.

Laurel Leaf Willow, by Geo. E. Scott in Farm Life, May, 1906.

"Twenty years or more ago a contemporary sent me a little scion six inches long and half an inch in diameter. They called it a laurel leaf willow, and, like Jack's bean stalk, it grew and grew, till today it is forty feet high, with a short trunk nearly twenty inches through. It is a handsome thing, with its thousands of thick, glossy leaves glistening in the summer sunlight, and truly contributes a golden share to the beauty of our lawn. It has never had the pruner on it since a little tree; as it naturally cares for itself, it is a desirable tree. It is hardy, and will grow in any rich, moist soil without cultivation."

Recommends Them.

"I have several Laurel Leaf Willows in my yard. I consider them perfectly hardy and suitable to this climate. They have the most handsome foliage of any tree in my yard. They are not affected by worms and I sincerely recommend them."—C. A. Stubbins.

The following clippings cover a wide range of territory from Canada to Kansas and the Lakes to the Rocky Mountains with its varying soils and climates, yet the verdict of men of wide experience and good common sense is that we need more trees, more lumber, posts, poles, shelter-belts and protection.

"How cheerless is a home without trees about it! It is a mystery to me how a man making himself a home can sit down seemingly contented, without first planting out some trees for shade and ornament. Trees judiciously planted add wonderfully to the attractiveness and value of the home and farm. On many farms there are waste corners here and there that could well be set with trees, which would, in the course of a few years, become an abundant source from which to get fence-posts, firewood, and timber for other off purposes such as are always needed about the farm. Nut bearing trees, besides furnishing all these products, annually yield a healthful and profitable harvest of fruit. Many of our finest deciduous trees furnish an excellent field for the honey bee. I consider it the first thing for a man to do, on taking possession of a home of his own, is to set out trees and plants and to continue doing so every year. He should continue even after he becomes old, for nothing can make the home dearer to the children and the grandchildren. Even if he should never eat the fruit thereof, it will make a splendid monument to his memory."—F. H. D., West Caton, N. Y., in the Farm and Home.

Note the Following:

"The economic value of a ten-acre grove on the prairie farm cannot be denied. The warmth, shelter and protection afforded by such a grove, when properly located, becomes almost invaluable in that line alone. Such a grove ten years from planting will furnish all the fuel needed by the owner, as well as wood for a hundred and one useful purposes on the farm. If I were to open up and develop a prairie section for a farm today, I would divide it into four forty-acre tracts, planting a row of timber on the line of each forty. I would also try to get the neighbor who might join lands to co-operate, and plant, jointly, timber on the line dividing the farms. This plan would make the equivalent of thirteen and one-half acres of timber on the farm, allowing a strip of fifty feet for the trees. **A prairie farm so planted will, without any doubt whatever, produce more crops and of better quality than would the whole of the land if it were in crop without the trees.** All through the West are hundreds of instances every year where the protecting influence of such a row of trees has proved the salvation of a grain crop by modifying the effect of the hot winds in August. The grain is not blown down so badly by summer storms, and the escape of moisture is prevented to a large extent. This is saying nothing of the great value such protection becomes from the cold winds of winter."—From the Prairie Farmer.

Some Good Advice from South Dakota.

"I have long made extensive observations of the timber planting carried on in the West as connected with the supply and demand for timber in all its various uses. I advise the farmers of the middle West to engage in tree planting more than ever before. Pine and other kinds of timber so long in use are becoming more dear every season, and this emphasizes the necessity of acting now and getting a new source of lumber started before the other is entirely beyond reach. The frame part of my farm buildings is made from cotton-wood such as I grow here, and I consider it in every way as valuable as pine."—W. L. Brockman, South Dakota, in the Homestead.

Trees as a Protection Against Hot Winds.

"I have suffered no small loss in farming from the effects of the hot winds from the prairie, which so rapidly evaporate the solid moisture. I have often made this statement, that the one great remedy that can alone prevent this condition is the planting of timber belts in and around every farm. These would not only break the force of the wind in summer and winter, but also equally distribute the snow-fall. I think it is a great mistake for farmers to wait for government aid when they could accomplish the result by co-operation with comparatively small expense. Many farmers also overlook the fact that such a timber belt will, if properly handled, more than pay for itself in the fuel, fence material and other lumber it will furnish."—F. C. Johnson, in the Western Farmer.

Prepares the Farm for Fruit Growing.

"The culture of forest trees upon the farm and the culture of fruit should go hand in hand, as one blends in with the other. Successful forest culture gives annual returns just as much as fruit growing. It yields wood for fuel, fences and building purposes. It affords protection from the elements and adds to the value and beauty of the farm. If practised generally in a community, it permits the establishment of many other industries, such as saw mills, pulp and box factories, wood alcohol factories, sugar camps, etc. Many pieces of land on the farm that are not fit for other crops should be given over to the growing of trees." (John Bifford, in the Prairie Farmer.)

State Auditor Dunn yesterday sent out 2,000 checks aggregating \$16,634.40 in payment of the state timber bounty of 1901. The state law provides for a bounty of not to exceed \$2.50 per acre for timber planted in the state. The trees must not be more than eight feet apart each way, and, if those that die are replaced, the bounty may be drawn for six years.

This year the bounty was paid at the rate of \$2.40 per acre, and the reports of the County Auditor showed that 6,931 acres are devoted to timber growing. There are 2,800 persons residing in forty counties represented in the distribution. (From the St. Paul Pioneer Press.)

Makes the Homestead More Valuable.

"Nothing can pay a young man more liberally than to plant trees on the homestead every year. Not only is the prairie farm thereby made more valuable should it ever become necessary or wise to sell it, but the timber crop that may be harvested annually in after years will produce a source of revenue that should not be overlooked. Utilize the odd corners of the farm for tree planting. Select both the quick and the slower growing varieties, plant a few nut-bearing trees by all means, especially the black walnut, which has a double value." (From the Homestead.)

Pays More Per Acre Than Any Other Crop.

"There is a ravine running through my farm in which I have from ten to fifteen thousand ash trees growing. In ten years or less I will have all the fence posts I can use and probably a great many more. Good fence posts are not easily secured in this part of the country, and I calculate **this crop of ash trees will pay me more per acre** than any one other crop on my farm." (M. J. Borland, Nebraska, in Wallace's Farmer.)

Good As An Investment.

"The U. S. Department of Agriculture has been making extensive experiments in starting timber growth on the sand hills of Nebraska and the other states of that region. The movement is meeting with general approval by the people of the state, and it is conceded that nothing can add so much to the value of the prairie farm as the planting of trees, and that purely as a matter of investment." (From the American Agriculturist.)

Extracts from an address by E. M. Sherman of Charles City, Iowa, before the Minnesota State Horticultural Meeting at Minneapolis, on the topic,

"Growing Hardy Ornamental Trees and Shrubs."

"The growing of hardy trees and shrubs is a subject in which I am deeply interested, and I want to say right here that we must look to our native trees and shrubs for the things which are to do us the most good. We as nurserymen and horticulturists search the world for things of beauty and usefulness to ornament and improve our homes, and many times we neglect in our own back yard things that are more valuable.

Now taking the native ornamental trees, we have a long list that possesses great value. Among our deciduous trees we have the linden, or basswood. It is a tree that to me is of great interest. When planted alone it makes a strong upright tree with very dense foliage. The leaf stalks are of different color from the leaves, and the flowers and fruit it bears are very interesting. The tree when in bloom is a thing that is a delight to the whole neighborhood.

Our white elm, much more generally planted, I think can hardly be surpassed as a street tree; the red elm is seldom planted, and the cork bark, or rock, elm still less frequently, but I think

both of these trees are worthy of attention. In some cases they exceed in value the white elm. The red elm is larger in foliage, and the bud is quite distinct. The cork bark elm grows with a round top, and the foliage is very dense.

In some sections of the state the shellbark hickory grows very well, and where it does thrive, I think it is a most beautiful tree. The opening of the buds on the shellbark hickory is something which once seen will never be forgotten. The buds are very large, and the bud scales when they break open have the effect of a large flower. In most cases they are yellow, a yellowish brown shaded with green, but their color is variable, and we frequently find them in shades of rose and red. It is something which should be more widely planted, but it will only stand in the southeastern part of your state.

The hackberry is another tree which should be more generally planted. Then we have the birches and the willows, which in their place are worthy of attention. Among the smaller trees we have the ironwood, and some of them are very beautiful indeed. The thorn tree makes a low top with dense foliage and seldom grows to a height exceeding fifteen feet. We often find the top of great diameter in comparison with the height of the tree, and the foliage is very dense. I think the various forms of this tree are of great interest.

Then there is another class of trees we seldom see planted, and that is the oak. There are several varieties of the oak that do well with us, and I think are deserving of more attention than we give them. There is the white oak, the red oak, the pin and scarlet oak, all of which are perfectly hardy with us. We have a specimen of the burr oak in our nursery three years old, once transplanted, which is five feet high. We have the red, scarlet and pin oak that have made a growth of seven feet with one transplanting in three years.

The sugar maple forms a dense top thickly covered with leaves which are of a glossy, deep green. It is one of the best street trees in northern Iowa. The red maple will thrive also in Minnesota, and the silver maple will thrive in the greater portion of your state. The black walnut and the butternut will also thrive in some sections of your state.

There is one tree that is being grown to a certain extent among nurserymen which I think deserves wider attention than it has received. It is perhaps not so valuable an ornamental as a forest tree, and that is the wild black cherry. Black cherry lumber is worth \$250.00 a thousand and it can be grown as readily as maple. This is a tree that is native throughout the larger portion of Minnesota. The Kentucky coffee tree is a peculiar thing, and the tree is of a very interesting habit. The shape of the Kentucky coffee tree is of the general shape of the black walnut, and it is a tree that should have more attention than it now receives.

Among the hardy ornamental trees not native of this state that are worthy of planting are the European Mountain Ash, the weeping mountain ash, cut leaved birch, and catalpa speciosa. We can also grow in the southern part of the state the wafer ash, or hop tree. This is scarcely more than a shrub. It is native of this country and grows perhaps fifteen feet high, with very deep green, glossy, three lobed leaves. The fruit has a light wing which extends entirely around the seed, which has a strong hop odor. It is a very pretty shrub in some places.

We have a few evergreens in this state that I think deserve more attention than they receive. The white pine is very suitable for transplanting and makes a beautiful tree. The white spruce is also a fine tree and one that will thrive over the entire state.

Then there are the arbor vitae and red cedar; they also have a place in hedges.

The European larch is a very much neglected timber tree. On our old farm in Chickasaw County, Iowa, one of the first tasks I was set to, as a small boy, was to plant a grove of European larch. A few years ago we had occasion to frame a barn and used some of these trees as timbers for the barn, and they squared six inches thirty-two feet from the ground. Those trees had been standing probably thirty-five years. It is a rapid growing tree, and the reason it has not been more largely disseminated throughout southern Minnesota is due to the fact that it starts very early in the spring and is very difficult to handle after it is once started. It should be handled in the fall or early in the spring."

Some pertinent remarks by President Owen of the Minnesota State Horticultural Society occasioned by Prof. S. B. Green's address on

"Needed Forestry Legislation"

in which he urged the state to make generous appropriations and set aside reservations in order to re-forest the state.

"There is no doubt but what every word that Prof. Green has said is absolutely true, and this great State of Minnesota, should take hold of the forestry matter immediately. I took up the paper the other morning and read an item saying that one of the large sawmills of this city would be closed forever. Now, this is but the beginning of the end. The grand heritage that was left to these people is being swept away, and the people have not been benefitted. In the earlier days of this state the great pine forests were wasted. I know very well that in the early contracts for logs made in this state, it was specified that no logs should be cut smaller than eight inches at the top, and now they are willing to cut logs not over five inches, and I have seen down in the State of Maine, in booms and in mills, logs that would not make telephone poles, and so crooked that it would be utterly impossible to get anything out of them in the shape of lumber, except by cutting them up into four and six foot lengths. The State of Minnesota is suffering the same way, and ten years from now I do not believe there will be a sawmill running in the city of Minneapolis. Is it not time for the government to take hold of the forestry situation when there is an opportunity like this in the State of Minnesota? I believe sentiment is growing so strong that people will demand that the state make an appropriation for growing timber and the cultivation and reforestation of the land."

The following is part of Gov. Burkes' address at Kenmare, N. D., February 1st, 1908, in the dedication of the new high school building.

"Now that you have this beautiful high school building, so attractive in every way and so complete, you should commence to make the exterior surroundings attractive. You should have a grove of trees surrounding this building in time. You should plant trees as soon as you can. Let the children help in the planting of these trees—and teach the farmers something. I am a crank of forest-culture and silva-culture. There is nothing more important today with the American people than the question of forestry. The

great forests are being destroyed at a terrible rate. The Chief of Forestry tells us that in twenty-three years all the forests will be exhausted. It was this which caused the government to call a halt on this terrible devastation. The President spoke of it in his speeches all along the Mississippi. Don't wait till you are obliged to do something, but begin this very season. France and Spain are reforesting their countries. Their springs and streams are drying up because the country has been robbed of its forests. Is it any wonder that the hot winds sweep these countries? It will be the same here in time as there. Up here in the Turtle Mountains where there are forests there is an abundance of moisture, springs, etc., one spring discharging 500 gallons of water per minute. The forests act as a sponge in maintaining the moisture; the more humidity the less evaporation. The great thing which North Dakota has to fear is drouth and hot winds. Rains come at irregular times and we have nothing to hold the moisture. The hot wind blowing across the prairies for hundreds of miles with nothing to break it becomes as a blast from an oven, and when it reaches your crops they are withered and parched. This is a condition today and we can meet and remedy it by planting trees. Now that the government is taking the matter up with congress, would urge that the Bad Lands be converted into a national forest reserve. These Bad Lands can be made a great country. No one will file on them as they are; no one can live within them. If our representatives would ask for the Bad Lands to be set aside as a national forest reserve, Congress would grant it. The United States has received \$1,500,000 from the forest reserves this year, so these reserves are on a paying basis. In Germany forestry is in the hands of the Government and 25% of the country is covered with forests. That land has been farmed for thousands of years and is as good as ever. In England, on every 160 acres there are 40 acres of timber. If we had 40 acres of timber on every 160 acres here, there would be no hot winds or drouth and no question about there being plenty of moisture. The question would be solved. What a majestic, splendid country this would be with its golden grain most beautiful, its cattle, hogs, etc., which produce wealth. I would have North Dakota with groves, its rich soil, oceans of wheat, thousands of cattle and all these rather than dotted with grand mountains. Looking into the future, knowing the people of the state as I do, I see this country the most beautiful in the world; a national forest reserve in the Bad Lands, groves everywhere—the grandest spot in the universe. Then I behold the colored woodland, carpeted with green, springs rushing forth and rippling as if out for a holiday; gentle rains, blue skies—and all nature smiles. Autumn comes with its golden fields of grain, leaves of crimson, all nature bounteous—a glory to behold. This is the kind of a state we can make, and if you only have the courage to build, this is what it will be."

This article is from the Kenmare, N. D., Journal of March 5th, 1908, and being an editorial by one having no pecuniary interest in the sale of nursery stock, is especially commended to your careful reading.

"Pay Your Taxes by Planting Trees."

"Farmers, why don't you plant trees? Don't you know that you can pay the taxes on your land, or the greater portion of them simply by setting out a few trees? Well, you can, and you should do it. If every farmer would do this there would be a great change in the appearance of our prairies, their taxes would indeed be small

and we would be assured of moisture. In the session of our legislature for the year of 1905, Herman Scheer, a well-to-do, thrifty German farmer from Wells county, and an intimate friend of the Journal editor, who was a member of the legislature, introduced a bill, which became a law and now is a law, providing for a reward to the farmers who plant trees on their farms along the highways. This law is printed elsewhere in this issue, and we urge the farmers to read it, and begin this coming spring planting trees. The author of this bill is one of the most progressive farmers in Wells County, and realizing the great benefit to be derived from tree culture, worked this bill through the legislature for the mutual benefit of the state and his fellow farmers. Farmers, did you ever stop to think what consideration was given you and your welfare by the legislature when those men agreed to pay you for your labors in planting trees? Think of it! you will be paid—or allowed on your taxes, which is equivalent—\$3.00 per acre or \$2.00 per 80 rods along the roadside for five years—simply as an inducement to improve your farms.

Aside from the pecuniary gain in planting trees, the owner will be rewarded by the assurance of moisture produced. Nature is extremely sensative and never forces her gifts of plenty upon an unappreciative people. The mole originally had eyes, but sought to bury itself and refuse the light, hence nature in turn refuses to give it eyes. Let a person cease from exercise and he becomes puny and frail; let him exercise and he is given strength accordingly. And so with moisture. If we invite it, we will receive it, but with no effort on our part, nature will not thrust that life-giving necessity upon us. Trees insure moisture, barrenness is an assurance of uncertainty. Did you ever hear of a drouth in a timbered country? Did you ever hear of an assurance of sufficient moisture at all times in a prairie country? No. Both propositions are absolutely opposed to science and nature.

Read the law to which we refer and talk it over with your neighbors, then make a firm resolution to begin this very spring ~~—AND CARRY IT OUT~~—to plant your share of trees."

This is the law referred to in the preceeding article.

"Bounty for Tree Culture."

Sec. 1—Bounty for Tree Planting. That any person who shall hereafter plant, cultivate and keep in growing, thrifty condition, one acre and not more than ten acres on prairie land with any kind of forest trees and shall plant or have planted said trees not more than eight feet apart each way, shall be entitled to three dollars for each acre so planted and cultivated to be deducted annually from the taxes levied against real estate comprising of eighty acres, one hundred sixty acres or three hundred twenty acre farm as the case may be upon which said trees are growing, but such bounty shall not be paid unless such grove shall have at least four hundred living trees on each acre so maintained and kept in growing condition.

Sec. 2. Every person planting such forest tree or trees suitable for hedge in rows as boundary lines along the public highways or on any other portion of his premises which rows shall contain not less than two living trees to each rod and who shall in other respects comply with the provisions of this act shall annually receive a bounty at the rate of two dollars every eighty rods of each row in length; provided, however, that no bounty shall be paid or deduction allowed under the provisions of this act for a longer period than five years upon any one tract or row of trees.

In regard to the variety of trees to grow, we believe the soil, climate, location and seasons must be considered. We herein give some instances of good results with various kinds of trees.

Mr. Emil Sahler of Waseca, Minn., spoke as follows before the Minnesota Horticultural Society a few years ago. Mr. Sahler speaks of the

“Norway” Poplar.

“The tree is a cross between the wild poplar and the cottonwood, and it originated in Norway so far as I can learn. It was brought to Minnesota by a man who came from one of the eastern states, with a wagon load of the slips, to sell them to the farmers. He claimed that the tree was much better than the cottonwood and that it did not raise the cotton which is so troublesome. In my fourteen years experience with the tree, I find it to be a good clean tree.

“The Norway poplar tree grows faster than any other tree I know of, and it grows up straight with strong limbs. The grain of the wood is straight. While the tree is young the bark is smooth, but when it gets older the bark becomes rough, and it does not sun-scald nor crack open. The tree will bear transplanting well and can be raised on all kinds of soil. The leaves hang on the tree as late as the middle of October.

I have lived on the Minnesota prairie for thirty-three years. During this time I have tried all kinds of trees for wind-breaks. Thirteen years ago I planted three thousand five hundred Norway Poplar on my farm for a wind-break, and I have had such good success with them that I have planted more from year to year. I now have four acres of this kind of wind-break grove around my buildings, yard and apple orchard. I have trees of this kind one-third of an inch thick when planted fourteen years ago, which now measure seventeen inches in diameter, and are from forty-five to fifty-five feet high. I challenge any farmer or tree grower in the state to show better results. Considering the age of my trees, I believe there is not a better wind-break grove in the state. During the past four years I have taken all my summer firewood out of this grove, four or five cords or more each season. I cut this wood and pile it up green in the woodshed; it is soon dry enough to burn and it makes a splendid heat.

“The ground should be kept clean of grass and weeds so as to give the little tree a chance to grow, and it will grow. I take care of the trees in this way for three years, when they will be large enough to shade the ground so that neither grass nor weeds will grow.

Four years ago this spring I planted five hundred trees. At the present time they measure on an average thirty feet in height, and are from four to seven inches in diameter. When the trees are from five to eight inches thick, I cut out every other row. This gives the remaining trees a better chance to grow, and the cut trees make good firewood.

“I have twenty rows of poplar on the west and north of my yards and buildings, and ten rows on the south and east, in addition to a large number of soft maple and box elder trees and evergreens. Had it not been for my grove, my buildings would have been blown down in a tornado last July, as that storm took down a number of farmer's buildings in my neighborhood not well protected by groves. These winds tested my trees, and they stood the storm well. A small number were blown down, and one tree twelve inches in diameter was torn out by the roots. Some oak trees near by were destroyed. My poplars seem to stand the wind as well as the oak

thus far. This proves that the poplar is a sturdy tree, and a good storm protector. Every orchard should be protected by such a wind-break.

"For a wind-break and snow catcher they can be planted every eighteen inches. I let the limbs grow on the outside row of trees; they grow out very thick. The more limbs the more brush, and that will stop the wind, and the snow will pile up in and around the trees and not be in and on everything in the yard. The inside trees are stripped, say the first year, from the top of the tree down to the bottom. The way I do it, I wear a glove, so it will not injure my hand. I take hold of the top of tree with the left hand and with the right hand I strip off the leaves and little twigs, and they will not grow any more. The next year I do the same. I do this when the leaves and twigs are from one-third inch to one and one-half inches long.

"By planting two rows around the hog pasture and stock pasture in four or five years it will make the best kind of shade for the stock. I have planted Norway Poplar on the south side of my pasture and lane for shade for the stock, and in warm, sunny days the stock will come to the shade themselves. The Norway Poplar grove makes one of the best shade trees I have seen, as the leaves are very plentiful on them and very large. The ground should be plowed at least seven inches deep and well manured where a grove is to be planted, as the little roots need the ground very loose and mellow, and that will give the little trees a good start. This tree stands transplanting remarkably well, even when eight or twelve feet high I take all the roots with the trees I possibly can leave on it, then I trim off all the limbs excepting three or four on the very top; then I dig a hole at least two feet deep and three feet across it. I plant the tree from ten to twelve inches deeper than it was before, and pack the dirt very solid on the roots, and by doing so the tree will stand a great deal more wind, for if the roots have started to grow, if planted shallow and a heavy wind blows, it will be apt to loosen the roots and set the tree back a good deal and sometimes will cause it to die. But if the tree is planted deep, the roots will not be destroyed and will grow every time.

"I plant all kinds of trees deep for a good many reasons: if drought sets in, and they are set deep the roots will be more apt to have damp ground and will be more sure to grow, and if I want to cultivate the trees my plow and cultivator, will not detach nor pull up the roots.

Prof. Bailey mentions the

Soft or Silver Maple.

"The Soft Maple is popular where quick growing trees are desired. It is an ornamental tree with wide spreading, slender branches, succeeding almost everywhere."

Prof. S. B. Green of the U. S. Experimental Station University of Minnesota, describes the Soft Maple as follows:

"The Soft Maple is a large, quick growing tree often reaching ninety feet high, with pendulous and light airy foliage which gives it a graceful appearance. It is found as far north as New Brunswick and extends as far south as Florida, and west to the Dakotas and Nebraska. It is adapted to a wide variety of soil and is especially abundant along rivers, often growing luxuriantly along sand bars. It is a very common tree in southern and central Minnesota and north along the Mississippi Valley. The wood is light,

hard, somewhat brittle, and easily worked. It is exceedingly hardy and of very rapid growth. It makes a good street and lawn tree on retentive land. If the trees are pruned occasionally, they make very satisfactory shade trees and are highly esteemed for this purpose in many sections of Minnesota. The Soft Maple is successfully used for shelter belts. The wood makes good fuel and is well adapted for interior finishing and flooring. Maple sugar is sometimes made from the sap of this tree."

Prof. C. B. Waldron of the U. S. Experimental Station located at Fargo, North Dakota, recommends the Soft Maple:

"I consider the Soft Maple as the best wind-break tree, all things considered, for this part of the state. My idea is that wherever water comes within eight or ten feet of the surface and wherever the soil is retentive of moisture that the Soft Maple is one of the best trees. It has the habit of branching very close to the ground and these lower branches remain as thrifty and vigorous as the upper ones. This makes it especially valuable for planting as a wind-break."

Prof. S. B. Green, Horticulturist for the State of Minnesota, gives the following description of the

Russian Golden Willow

as taken from a report of the State Experimental Station.

"This is a form of the White Willow that makes a round-topped tree. It is distinguished by this characteristic and also by its twigs, which are a bright golden yellow. The catkins, too, are yellow in color and produce abundantly. Perfectly hardy here, and one of the most ornamental trees of the Willow family. It is well adapted for the purpose of the shelter belt and gives a pleasing variety owing to its characteristic color, which it maintains the year round."

"My experience with the Russian Golden Willow on the southern and western prairies of Minnesota leads me to believe that this variety of the White Willow is a first class tree for general shelter-belt planting on the farms of this and other prairie states of this latitude. It is certainly far superior to the seedlings which have been generally planted by the western farmers. The Russian Golden Willow makes a round-topped tree and has bark of a golden yellow color in the latter part of winter and early spring. This is followed by yellow flowers which appear with the leaves. By these characteristics it can be easily identified, so that one may know that he has a desireable kind. This Willow is quite distinct from the old Golden Willow, which formed an upright, rather than a broad-topped tree, and is not so fast a grower.

The Box Elder as a Nurse Tree.

"The Box Elder is certainly the best nurse tree I know of, and in a grove it should be planted at about the ratio of three to one of all other trees. The Ash and Elm grow luxuriantly alongside it." (Minnesota Horticultural Society Report, 1897.)

"One of the best trees for prairie groves, perfectly hardy in almost any situation, grows rapidly when young and easily takes on a close, compact form, grows well in the shade of other trees, and makes a dense shade on the ground, which is a most important quality in a good shelter-belt tree." (Minnesota Agricultural Experiment Station, Coteau Farm, Bulletin 72.)

The White Elm a Beautiful Tree.

"No tree can surpass it for its beautiful proportions: has the remarkable power of adaptability in all kinds of locations and exposures." (Minnesota Horticultural Society Report, 1900.)

"Shorts," from an address by H. C. Rogers before the Ohio Forestry Society, on

"Catalpa Tree Growing."

"I was asked to come here today and talk on the subject "Why I planted one hundred acres of Catalpa trees in the year 1907." If you will stop and consider the question you will readily see there is only one possible reason for my planting one hundred acres of splendid farming land to trees. The reason is this: I am fully convinced the trees will make me more money than ordinary farming the land will make.

"I have studied this tree planting business from every possible view point. I have traveled thousands of miles investigating various aged plantings that were growing on all kinds of soil and under varying conditions. I have made this study of trees so that I could know approximately how much material could be grown on one acre of ground in a given length of time. I know timber and lumber of all grades have been increasing in value for fifteen or twenty years, and more markedly during the past five years. In all human probability this advance in price of timber and lumber products will continue. Our population and their needs grow each year, while our timber supply is decreasing more rapidly each year. A wood famine is almost in sight. We are using wood three or four times faster than it is being produced, and many kinds of wood are now exceedingly high priced and hard to get.

"Experience and common sense should teach us that when a commodity of common use and necessity like wood becomes scarce and high priced the men who are far-sighted enough to prepare and be ready to supply this demand will reap great financial reward.

Catalpa wood can be put to more valuable uses than any other American wood.

"Without doubt catalpa trees, if of the true speciosa type and grown in a suitable location, will produce more wood and of greater value than any other known tree.

"I have a block of wood that was cut from a Catalpa tree that grew at Woodstock, Ohio. This tree was nineteen years old when cut and the block of wood measures twenty-one inches across (diameter), and the tree was about fifty feet in height. This section of wood was taken at about one foot above the ground. It is very remarkable that this tree was adding as much to its thickness the latter years of its growth as it had while a small tree. Any four year period of its growth measures just a little more than four and one-half inches.

"The International Society of Agriculture made an exhibit at the World's Fair at St. Louis of catalpa wood and its uses that was most instructive. There were great piles of railway ties just taken from the tracks of the Illinois Southern railroad that had been in use for thirty-two years, and they were perfectly sound and free from decay. There were fence posts taken from an old fence in southern Illinois known to have been in the ground for eighty-five years, and perfectly sound.

"I have examined the native growth of catalpa speciosa in Southern Indiana and Illinois, and found trees that would make a fifty-foot saw log perfectly straight and smooth. The farmers of that region will sometimes haul fence posts of this wood twenty miles when they could get oak posts on their own land.

"My investigations have demonstrated to me that I can make many times as great profit growing catalpa trees as I can hope to realize from ordinary farming of the land. The Ohio Experiment Station has made careful investigation of some of the older groves of catalpa trees in this state, and their report is most encouraging. Their report shows that the Lemar grove has made three thousand and more fence posts per acre at twenty-three years' growth. These posts are worth at wholesale twenty cents each, and this brings the value of the timber on one acre to six hundred dollars.

"This station is doing a great work by encouraging the planting of experimental plots of true catalpa speciosa trees in nearly every county in the state. Unless the land owners of this country see the need to plant trees, where will the lumber be found to supply our future wants? Since the vast area of hard wood and pine forests which covered this country a few generations ago has been cut off and the land put to agricultural and pasture uses nature is not growing trees nearly fast enough to supply our actual wants.

"I was drawn into the idea of timber growing solely from the business and commercial view of it; but I am a lover of trees and know there are many reasons why we should grow them aside from the dollars and cents point of view. However, I know it is the profit, the money consideration only, that will ever induce the mass of farmers to plant trees; therefore the great returns that are possible from timber growing must be made the central idea—the working point from which to interest the land holder and farmer.

"The protecting influences of even a small grove of trees from the cold winter winds are truly remarkable, and there is no reason why every farm should not have sheltering groves or belts of timber. With the protecting trees will also come more birds, the farmers' best friends. We who own the land owe a duty to future generations not to strip the earth bare of trees, leaving it a bleak and barren waste. Rather shall we plant broad acres with beautiful trees, which will bring us financial gain and leave this fair land of ours as nature intended it should be, partly covered with tall and stately trees which shall give shelter for the birds and beasts and temper the winter blasts and summer sun to the needs of man.

"The approved method, that followed by the railroad companies who grow catalpas by the section in the valleys of Kansas, is to plant about 6x6 feet, and when the trees are two years old, to cut them off close to the ground, and leave one sprout to grow from each root. This throws up a strong stalk six, eight, or ten feet high without a limb, and they are able to cut one good fence post from each tree, thus thinning them out and leaving the larger trees to grow to tie size. The cultivation of catalpa in this way on bottom land naturally well drained is reported to have proved very profitable to railroad companies and some private growers.

"On the Sherman Homestead near Fredericksburg, Iowa, there are growing several varieties of trees of good growth. Several years ago a large barn was built almost entirely of lumber raised thereon. European Larch now thirty-two years old fifteen to eighteen inches in diameter at base of tree and over six inches forty feet from the

ground. White Pine planted thirty-three years ago are now forty feet high and fifteen to eighteen inches at base. White Ash forty-seven years old fifteen inches thick and forty feet tall. Black Walnut thirty-five years old, ten inches in diameter at base and six inches in diameter twenty feet from the ground. Cottonwood now cut down yielded one log twelve feet long, twenty inches thick, one cut fourteen inches and one cut ten inches to each tree. Soft Maple measured eighteen inches at base and eight inches forty feet from ground.



Returns from typical planted groves of various species in Iowa.

Species and county.	Town or township.	Age of grove.	Area of grove.	Spacing.	Average diameter.	Total production per acre.	Average annual production per acre.	Average annual re- turn per acre at \$3.50 per cord.	Poles, telegraph or telephone, per acre.	Number.	Number.	Posts (additional to poles), per acre.	Average annual re- turn per acre at \$1 and 15 cents each	
Silver maple (<i>Acer saccharinum</i>):														
Clarke	Liberty	32	3.3	4 by 4	.....	68.5	2.1	7.35	.....	560	2,622	.....	.....
Marshall	Eden	30	2.0	8 by 8	.....	54.0	1.8	6.30	.....	384	1,922	.....	.....
Ida	Ida	30	5.0	.....	.....	8.2	47.4	5.60	40	728	4,977	.....	.....
Wapello	Richard	40	4.0	4 by 8	.....	11.0	58.0	1.6	5.25	128	114	3,633	.....
Worth	Manley	24	1.5	8 by 8	.....	8.2	46.0	1.9	6.65	174	480	10,255	.....
Cottonwood (<i>Populus deltoides</i>):														
Pocahontas	Dover	23	1.75	6 by 22	.....	11.0	34.6	1.5	5.25	145	90	6,899	.....
Black birch (<i>Betula nigra</i>):	Woodbine	23	2.0	.....	.....	10.8	43.1	1.7	5.95	184	16	7,466	.....
Iowa	Anama	27	1.5	8 by 3	12.3	.5	1.75	296	1,644
White willow (<i>Salix alba</i>):														
Clay	Clay	21	1.5	.....	.....	42.5	2.0	7.00	.....	495	3,533	.....	.....
Greene	Greenbrier	23	4.0	12 by 2 $\frac{1}{4}$	.....	33.1	1.4	4.90	.....	504	3,299	.....	.....
Kossuth	West Bend	27	2.0	.....	.....	7.4	33.3	1.2	4.20	160	420	9,060	.....
Hardy catalpa (<i>Catalpa speciosa</i>):														
Iowa	Amana	21	9.5	9 by 5	.....	42.0	2.0	^a 7.00	.....	1,896	13,544	.....	.....
Do	do	20	9.0	9 by 5	.....	11.8	2.0	^b 2.10	.....	572	4,299	.....	.....
Dallas	Lincoln	21	1.5	4 by 10	.....	24.8	1.2	4.20	.....	1,296	9,296	.....	.....
Humboldt	Weaver	22	10.0	8 by 8	.....	17.0	.8	2.80	.....	1,288	8,788	.....	.....
Crawford	Denison	25	3.0	.....	.....	23.3	.9	3.15	.....	1,680	10,058	.....	.....
Montgomery	Sherman	23	.5	.....	.....	21.3	.9	3.15	.....	1,464	9,555	.....	.....
Black walnut (<i>Juglans nigra</i>):														
Adair	Jefferson	25	.3	3 by 6	.....	15.3	.6	2.10	.....	900	5,400	.....	.....
Monona	Moorehead	38	1.0	.....	.....	12.6	.....	.....	.....	672	2,655	.....	.....
Wapello	Richard	30	2.25	8 by 16	.....	35.3	1.2	4.20	.....	.....	.....	.....	.....
Madison	Madison	30	1.25	4 by 4	.....	35.5	1.2	4.20	.....	.....	.....	.....	.....
Green ash (<i>Fraxinus laevis</i>):														
Powersnick	Chester	34	2.5	8 by 4	.....	28.2	.8	2.80	.....	1,134	5,000	5,015	.....
Ida	Ida Grove	23	2.0	.....	.....	13.0	.6	2.10	.....	768	.....	.....	.....
Honey locust (<i>Gleditsia triacanthos</i>):														
Boone	Peoples	23	.4	8 by 10	.....	6.6	.3	1.05	.....	344	2,244	.....	.....
European larch (<i>Larix europaea</i>):														
Powersnick	Chester	24	2.5	6 by 10	.....	10.0	65.4	2.7	9.45	328	.....	.....	.....
Washington	Highland	31	2.0	4 by 4	.....	8.6	37.5	1.2	4.20	268	.....	.....	.....
Cass	Grove	33	3.0	4 by 4	.....	9.1	33.1	1.0	3.50	260	13,677	9,299	7,655
Montgomery	Sherman	29	1.0	6 by 4	.....	7.8	3.85	1.1	3.85	352	480	12,144	.....

a On good rich soil.

b On poor sandy soil.